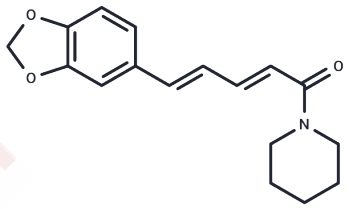
Data Sheet (Cat.No.T3002)

TargetMol

Piperine

Chemical Properties



CAS No. : 94-62-2

Formula: C17H19NO3

Molecular Weight: 285.34

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Piperine (Bioperine) , a alkaloid, has been used in trials studying the treatment of multiple myeloma and deglutition disorders.
Targets(IC50)	Endogenous Metabolite,Autophagy,Cytochromes P450,P-gp
In vitro	Piperine demonstrates varying lethality (LD50) across different routes of administration in animals. In mice, the LD50 values are 15.1 mg/kg for intravenous injection, 43 mg/kg for intraperitoneal injection, 200 mg/kg for subcutaneous injection, and 330 mg/kg for oral administration (gavage). In rats, the LD50 is 33.5 mg/kg for intraperitoneal injection and 514 mg/kg for oral administration (gavage).
In vivo	Magnolol exhibits antifungal activity, effectively inhibiting the growth of Trichophyton mentagrophytes, Microsporum gypsum, Epidermophyton floccosum, Aspergillus niger, Cryptococcus, and Candida albicans with a minimal inhibitory concentration (MIC) ranging from 25 to 100 μg/ml. In vitro, magnolol enhances the binding of [3H]-muscimol to the hippocampus.
Cell Research	Standard solution is prepared by dissolving 10 mg of piperine in 100 mL of methanol. The MTT assay is carried out to measure cell viability. Ten thousand cells in 100 μL of DMEM media are seeded in the wells of a 96-well plate. After 24 h, existing media is removed and 100 μL of various concentrations of piperine (20–100 μg/mL) are added and incubated for 48 h at 37 °C in a CO2 incubator. Control cells are supplemented with 0.05 % DMSO vehicle. At the 48th hour of incubation, MTT (10 μL of 5 mg/mL) is added to the plate. The contents of the plate are pipetted out carefully, the formazan crystals formed are dissolved in 100 μL of DMSO, and the absorbance is measured at 550 nm in a microplate reader[1].

Solubility Information

Solubility	Ethanol: 57 mg/mL (199.76 mM),Sonication is recommended. DMSO: 62.5 mg/mL (219.04 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.01 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.5046 mL	17.523 mL	35.0459 mL
5 mM	0.7009 mL	3.5046 mL	7.0092 mL
10 mM	0.3505 mL	1.7523 mL	3.5046 mL
50 mM	0.0701 mL	0.3505 mL	0.7009 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Bhardwaj RK, et al. J Pharmacol Exp Ther, 2002, 302(2), 645-650.
Gu D R, Yang H, Kim S C, et al. Water Extract of Piper longum Linn Ameliorates Ovariectomy-Induced Bone Loss by Inhibiting Osteoclast Differentiation. Nutrients. 2022, 14(17): 3667.
Sunila ES, et al. J Ethnopharmacol, 2004, 90(2-3), 339-346.
Gao R, Liu Z, Meng M, et al.Neurogenesis-Associated Protein, a Potential Prognostic Biomarker in Anti-PD-1 Based Kidney Renal Clear Cell Carcinoma Patient Therapeutics.Pharmaceuticals.2024, 17(4): 451.
Piyachaturawat P, et al. Toxicol Lett, 1983, 16(3-4), 351-359.
Zhai WJ, et al. Piperine Plays an Anti-Inflammatory Role in Staphylococcus aureus Endometritis by Inhibiting Activation of NF-κB and MAPK Pathways in Mice. Evid Based Complement Alternat Med. 2016;2016:8597208.